

IN THE SPECIFICATION

Please insert the following 2 paragraphs on page 3 of the specification after  
line 7:

"Fig 3 is an illustration of one embodiment of a method to synchronize  
the time of a plurality of controllers with the master controller.

Fig. 4 is an illustration of one embodiment of a method to establish a  
master controller."

Twice Amended: Please replace the paragraph on page 4 of the specification,  
lines 11-15 with the following:

B2  
"In addition, each of the controllers 104 may be connected to one or  
more elements 110. In Figure 1, the one or more elements is a speed sensor 114. In  
other embodiments element 110 may include one or more sensors, actuators, displays  
or other elements adapted to interact with a controller 104."

Please replace the paragraph beginning on page 4 of the specification, lines 22  
- 30, and continuing onto page 5 of the specification, lines 1-8 with the following:

B3  
"Fig. 2 illustrates one embodiment of the method of the present  
invention. The present invention includes a method of managing time for a  
processing system 104 located on a machine. In a first control block 202 an operating  
characteristic of the machine is established. In the preferred embodiment, the  
operating characteristic is indicative of machine, or equipment, operation, such as  
engine operation. Therefore, for example, the operating characteristic may be  
indicative of whether the machine engine is running, or stopped. In one embodiment  
a controller 104 may be connected to an element 110 that generates an operating  
characteristic signal. The element may be an engine speed sensor 114 or key switch

B3

(not shown). Other indications of machine operation include the engine oil pressure, or alternator activity, such as the alternator R terminal."

Please replace the paragraph beginning on page 5 of the specification, lines 9-30, and continuing onto page 6 of the specification, lines 1-10 with the following:

B4

"Therefore, the controller 104 may receive an operating characteristic signal from an element 110 and responsively establish the operating characteristic of the machine, e.g., whether the machine is operating. In an alternative embodiment, one or more of the controllers 104, e.g., such as a master controller if one is utilized, may establish the operating characteristic of the machine, and responsively broadcast the operating characteristic signal to the other controllers. The controller establishing the operating characteristic does not have to be the master controller. The receiving controllers 104 may receive the operating characteristic signal and responsively locally establish the operating characteristic of the machine, e.g., whether the machine is operating. Therefore, the operating characteristic signal is a signal indicative of the operating characteristic of the machine. In one embodiment, the operating characteristic signal may be a signal such as an engine speed signal received from an engine speed sensor 114. Alternatively, the operating characteristic signal may be a signal generated from one of the controllers, e.g., a master controller 104, which is indicative of the machine operation. In the event the operating characteristic signal is received from another controller 104, the signal may include a binary bit indicating the machine is either operating, or not operating. Therefore, the characteristic signal may be received from elements 110, or other controllers, and used to locally establish the operating characteristic of the machine."

Please replace the paragraph beginning on page 13 of the specification, lines 29-30, continuing onto page 14 of the specification, lines 1-30 and continuing onto page 15 of the specification, lines 1-4 with the following:

"In the preferred embodiment, on power up, an arbitration process is initiated by one or more of the controllers 104. For example, on power up, a controller 104 may send out an arbitration signal indicating the initiation of arbitration. The controllers 104 may respond by generating a priority signal indicative of one or more characteristics of the controller 104. Each controller 104 receives the generated priority signals and determines whether it should become the master controller or remain a non-master controller 104. The controller 104 that becomes the master controller 104 then begins to establish an operating characteristic indicative of whether the machine is operating. The master controller may be connected to an element such as an engine speed sensor 114. Therefore, the master controller will receive an operating characteristic signal, e.g., engine speed signal. The operating characteristic signal may be received from an engine speed sensor 114, key switch, engine oil pressure, alternator signal, or other signal indicative of machine operation. The master controller 104 generates an operating characteristic signal which includes data indicative of the operating characteristic. The master controller 104 also updates a local time, as do the other controllers 104, in response to the operating characteristic. In practice, the local clock of each controller 104 updates the local time. For example, regarding the master controller 104, when an engine speed sensor signal indicates the engine has begun running, the local clock begins updating the local time, and continues updating until the engine speed sensor signal indicates the engine has stopped running. The master controller 104 broadcasts an official time signal, preferably less frequently than the operating characteristic signal.

Please replace the paragraph on page 15 of the specification, lines 5-25 with the following:

"The non-master controllers 104 determine and maintain a local time. The non-master controllers 104 establish an operating characteristic. For example,

*B6 cont*

they receive the operating characteristic signal which contains the data indicative of the operating characteristic from the master controller 104. Alternatively, the controllers 104 may also be connected to an element, such as an engine speed sensor 114, that generates an operating characteristic signal. In this case, the controller 104 may directly establish the operating characteristic of the machine independent of receiving an operating characteristic signal from the master controller 104. The non-master controllers 104 update the local time when the operating characteristic indicates the machine is operating, and continue to update the time until the operating characteristic indicates the machine is not operating. The resolution of the local time generated by the local clock is based upon the resolution of the local time base signal generated by a local oscillator 112.”

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